

What is claimed is:

1. A method of dispensing a pharmaceutical, the method comprising:
supplying a plurality of fluid pharmaceutical components, each
5 component in a reservoir;
fluidically coupling the reservoirs to at least one electronically
controllable fluid drop generator; and
activating the fluid drop generator to eject variably selected quantities of
the pharmaceutical components onto a solid, orally ingestible pharmaceutical
10 receiving medium,
wherein the fluid pharmaceutical components include a vehicle that
substantially evaporates from the receiving medium, and an active
pharmaceutical ingredient with a solubility of at least about 30 mg/ml in the
vehicle.
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2. The method of claim 1 wherein the vehicle contains a component that
remains on the medium after evaporation, wherein the component has a low
toxicity as listed in ICH Topic Q3C Impurities and is Generally Regarded as
Safe.
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3. The method of claim 1 wherein the solubility of the active
pharmaceutical ingredient is up to about 300 mg/ml in the vehicle.
4. A method of producing pharmaceutical doses comprising:
25 ejecting from a fluid ejection device a vehicle with predetermined
properties together with an active pharmaceutical ingredient onto a substrate,
wherein the vehicle substantially evaporates from the substrate.
5. The method of claim 4 wherein the predetermined properties of the
30 vehicle include:
capability of being repeatedly ejected from the fluid ejection device with
a predetermined level of performance;
a component that remains after evaporation that has a low toxicity as
listed in ICH Topic Q3C Impurities;

capability of allowing the active pharmaceutical ingredient to dissolve in the vehicle with a solubility of at least about 30 mg/ml.

6. A pharmaceutical solution capable of being ejected from a thermal fluid ejection device onto a substrate comprising:
a vehicle with predetermined properties; and
an active pharmaceutical ingredient with a solubility of at least about 30mg/ml in the vehicle,
wherein the vehicle substantially evaporates from the substrate.

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7. The solution of claim 6 wherein the vehicle is capable of being repeatedly ejected from the fluid ejection device with a predetermined level of performance, wherein the vehicle includes a component that remains after evaporation and that has a low toxicity as listed in ICH Topic Q3C Impurities,
wherein the active pharmaceutical ingredient has a solubility of at least about 30 mg/ml in the vehicle.

8. The solution of claim 6 wherein the vehicle is at least one of 2-pyrrolidone (2-P), 1,2 hexanediol, sodium xylene sulfonate, ethylene glycol mono-phenyl ether, an alcohol, dimethyl sulfoxide(DMSO), n-methyl pyrrolidone (NMP), water and ethanol, hydroquinone, cyclodextrines, polyethylene glycol 400-600, absolute ethanol, propylene glycol, and glycerin.

9. The solution of claim 6 wherein the solubility of the active pharmaceutical ingredient is up to about 300 mg/ml in the vehicle.

10. A method of forming a pharmaceutical dose comprising:
means for transporting an active pharmaceutical ingredient from a thermal fluid ejection device to a substrate,
wherein the means for transporting substantially evaporates from the substrate,
wherein the active pharmaceutical ingredient has a solubility of at least about 30mg/ml in the means for transporting,

wherein the means for transporting has a component that remains on the substrate after substantial evaporation, wherein that component is Generally Regarded As Safe and is edible.

5 11. The method of claim 10 wherein the means for transporting is at least one of 2-pyrrolidone (2-P), 1,2 hexanediol, sodium xylene sulfonate, ethylene glycol mono-phenyl ether, an alcohol, dimethyl sulfoxide(DMSO), n-methyl pyrrolidone (NMP), hydroquinone, a cyclodextrine, polyethylene glycol 400-600, absolute ethanol, propylene glycol, water, ethanol, and glycerin.

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 12. The method of claim 10 wherein the active pharmaceutical ingredient is at least one of a bioactive agent, Digoxin, a non-ionizable low-aqueous solubility drug, prednisolone, sulfamethoxazole, reserpine, and any solid substance that is soluble in a given solvent and capable of being dispensed
15 using TIJ technology.

 13. The method of claim 10 wherein the means for transporting is at least one of Generally Regarded as Safe, edible, ingestible, used in the pharmaceutical industry, approved by the FDA, stable at ejection temperatures,
20 and capable of being ejected from the thermal fluid ejection device due at least in part to appropriate fluidic properties.

 14. The method of claim 10 wherein the means for transporting is one of 2-P with ethanol and DMSO with methanol, wherein the active pharmaceutical
25 ingredient is Digoxin.

 15. The method of claim 10 wherein the means for transporting is one of 2-P with ethanol and DMSO with methanol, wherein the active pharmaceutical ingredient is prednisolone.

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 16. A fluid ejection device dispensing a pharmaceutical solution comprising:

 means for substantially accurately dispensing an active pharmaceutical ingredient at a predetermined dosage within a relative standard deviation of less

than about 15%, wherein the ingredient has a solubility of at least about 30 mg/ml in a vehicle of the solution.

17. The device of claim 16 wherein the active pharmaceutical ingredient
5 is considered substantially highly potent and substantially of a low dosage.

18. The device of claim 16 wherein the solubility of the active pharmaceutical ingredient is up to about 300 mg/ml.

10 19. A fluid ejection device dispensing a pharmaceutical dose onto a substrate comprising:

means for transporting an active pharmaceutical ingredient, wherein the active pharmaceutical ingredient has a solubility of at least about 30mg/ml in the means for transporting,

15 wherein the means for transporting substantially evaporates from the substrate,

wherein the means for transporting has a component that remains on the substrate after substantial evaporation, wherein that component is generally regarded as safe and is edible.

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20. The device of claim 19 wherein the means for transporting is at least one of 2-pyrrolidone (2-P), 1,2 hexanediol, sodium xylene sulfonate, ethylene glycol mono-phenyl ether, an alcohol, dimethyl sulfoxide(DMSO), n-methyl pyrrolidone (NMP), hydroquinone, a cyclodextrine, polyethylene glycol 400-
25 600, absolute ethanol, propylene glycol, water, ethanol, and glycerin.

21. The device of claim 19 wherein the active pharmaceutical ingredient is at least one of a bioactive agent, Digoxin, a non-ionizable low-aqueous solubility drug, prednisolone, sulfamethoxazole, reserpine, and any solid
30 substance that is soluble in a given solvent and capable of being dispensed using TIJ technology.

22. The device of claim 19 wherein the means for transporting is at least one of Generally Regarded as Safe, edible, ingestible, used in the pharmaceutical

industry, approved by the FDA, stable at ejection temperatures, and capable of being ejected from the thermal fluid ejection device due at least in part to appropriate fluidic properties.

5 23. The device of claim 19 wherein the means for transporting is one of 2-P with ethanol and DMSO with methanol, wherein the active pharmaceutical ingredient is Digoxin.

10 24. The device of claim 19 wherein the means for transporting is one of 2-P with ethanol and DMSO with methanol, wherein the active pharmaceutical ingredient is prednisolone.